Closure of Ash Pond D
Hutsonville Power Station

Post-Closure Care Plan

Ameren Energy Generating Company
Crawford County, Illinois

July 26, 2011

HANSON
Engineering | Architecture | Planning | Allied Services

Client Review Draft

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1. Introduction

The Post-Closure Care Plan for Ameren Energy Generating Company's Hutsonville Power Station (the Station) Ash Pond D Coal Combustion Waste Surface Impoundment, presented herein, has been prepared in accordance with the requirements of the site-specific rule enumerated at 35 Illinois Administrative Code (IAC) Part 840. Concurrently submitted supporting documents are listed in the Reference Section of this report.

2. Post-Closure Maintenance Program

The post-closure operation and maintenance program will include the following:

2.1 Site Inspections

Inspection of the facility will be conducted on a quarterly basis for a minimum period of 5 years after closure. After 5 years, the inspection will be made semi-annually as long as the assessment will not be compromised due to the reduced frequency and that a request to monitor the groundwater monitoring system semi-annually is approved. After 5 additional years of semi-annual monitoring, the inspection will be made annually pending approval of an annual groundwater monitoring schedule. Discontinuance of the site inspections will occur after Illinois Environmental Protection Agency approval of the certified Post-Closure Care Report, as discussed herein.

Written record of the inspection(s) will be made and retained at the facility or the site operator's office. The inspector will assess the condition and need for repair of final cover and vegetation, as well as fencing, monitoring points, and surface water control features.

2.2 Erosion Control Maintenance

During the post-closure care period, repairs and maintenance, including repair of rills and gullies will be undertaken if ponding is observed, or gullies 6 in. or deeper have formed, or if vegetative or vector problems arise. Areas that have been identified by the inspector as particularly susceptible to erosion will be recontoured and reseeded as necessary.

2.3 Drainage Channel Maintenance

All eroded and scoured drainage channels will be repaired, and the lining material replaced if necessary. All vegetated areas and associated structures will be inspected as part of the site inspection.

2.4 Final Cover Maintenance

Residual settlement and erosion may require minor final cover repairs. If ponding occurs or depressions appear, the areas will be repaired in order to maintain the integrity of the final cover. Areas of settlement will be repaired with additional cover soils, as required.

2.5 Vegetation Repair

Areas repaired as noted above will require re-establishment of vegetative cover. Areas of sparse or failed vegetation in-excess of 100 ft^2 will be re-vegetated.

2.6 Geosynthetic Liner

During the post-closure time period all rips, tears, punctures or other damage to the geosynthetic liner system will be repaired. Construction Quality Assurance (CQA) methods in accordance with the project CQA Plan (Hanson 2011A) will be followed during the repair process.

2.7 Vegetation Mowing

The vegetation will be mowed annually. During mowing and site inspections, if any woody growth is found in the vegetative areas it will be removed promptly.

2.8 Miscellaneous Repairs

Minor repairs may be required to ensure the integrity and proper function of fencing, surface water drainage structures, monitoring points, and groundwater monitoring wells. Repairs will be made as warranted.

3. Groundwater Monitoring System

See Section 2 in the Groundwater Monitoring Plan Report (Hanson 2011B). A monitoring system maintenance plan is included at the end of Section 2.2 of that report.

4. Groundwater Monitoring Program

Requirements for the Groundwater Monitoring Program may be found in Section 3 and Appendix A of the previously referenced Groundwater Monitoring Plan Report (Hanson 2011B). Quality Assurance requirements may be found in Appendix A of that report.

5. Groundwater Monitoring Well Locations

Locations for the monitoring wells to be used for the trend analysis are identified in Table 1 in Section 2 of the Groundwater Monitoring Plan Report.

6. Groundwater Collection Trench and Discharge System

The Groundwater Collection Trench (Trench) is designed to continuously withdraw groundwater to control the gradient and flow direction of potentially impacted groundwater associated with the closure of Ash Pond D. The components discussed below are detailed on the Ash Pond D Closure Plans and Specifications completed for this project (Hanson 2011C).

Groundwater in the Trench flows by gravity to one of four (4) collection sumps, each equipped with a 50 gallon per minute (gpm) pump system. The pumps are controlled by a pair of float switches (low-

water and high-water) that activate or shut down the pump based on the water level in the sump. Water from each sump will be pumped to a central catch basin, and subsequently gravity drained to Ash Pond C. The collected groundwater and other surface drainage is then pumped to Ash Pond B, where it is further comingled with other drainage water before being discharged to the Wabash River in accordance with the Station's NPDES permit.

To evaluate Trench performance and pump operation, each pump will have a flow meter (for determining the discharge rate and volume) and a pressure transducer (for determining water levels) at each sump or sump discharge. Evaluation of the operation of the Trench will be based on regular readings of the flow rates, flow volumes and water elevations at each sump. For additional security, a warning light will be activated at the pump controller panel in the event that groundwater levels in the trench exceed the pump's high-water sensor.

The collection sumps will be constructed to prevent surface water infiltration, especially in the Wabash River flood plain (elevations below ~450.0' msl) where a bentonite seal will be included in the backfill. Water-tight connections are necessary in the flood plain to prevent the collection trench or sumps from being overwhelmed with surface water. After flood events, the collection sump risers should be inspected and re-grading should occur if water-born sediments have accumulated on or around the sump risers and/or covers.

Maintenance of any mechanical (e.g. pumps) or electrical (e.g. controller) components should be performed on the manufacturers' recommended schedule. Additional maintenance shall be performed when equipment is found to be malfunctioning or operating below expected performance levels. Access to some equipment may require opening water-tight covers or ports. Care must be taken when accessing these areas (sump covers, electrical panels, etc.) to replace or close the cover properly to ensure a water-tight seal is maintained. During flood periods, access to some system components (primarily the eastern two sumps) will be limited. Each pair of sumps (east pair and west pair) has been designed with redundancy, such that either sump can compensate for both for a reasonable period. This will permit repair or maintenance of individual pumps without interrupting the overall operation of the Trench.

Regular mowing of the Trench right-of-way will also be needed to prevent growth of trees and tap-root vegetation from penetrating the bentonite seal in the flood plain areas of the trench. Ponding above the Trench should be avoided by regrading when necessary. In addition, re-seeding should occur if areas of sparse vegetation develop, to prevent erosion of trench backfill materials.

Each collection sump is vented to atmospheric pressure via a conduit terminating at the pump control panel. The air vent (to be located below an electrical control panel) should be inspected no less frequently than during each groundwater sampling event and cleaned to insure proper operation. The Trench clean outs located in the Wabash River flood plain also have vents located either near the electrical panels or remotely at the top of the Ash Pond D berm. These vents should also be inspected for proper function.

The groundwater discharge piping and central catch basin will be buried, and should be relatively maintenance-free unless damaged. Electronic controls on each sump that document flow rates and volumes should be indicative of any restrictions that may develop in the discharge lines.

7. Groundwater Trend Analysis

See Section 5.2 in the Groundwater Monitoring Plan Report.

8. Mitigation of Statistically Significant Increasing

See Section 5.2.3 in the Groundwater Monitoring Plan Report.

9. Operation and Maintenance Plan for Structures and Devices

Operation and maintenance plans for all currently planned structures have been addressed in other sections of this report. Operation and maintenance plan for any future structures (if any) will be prepared at the time those facilities are installed.

10. References

Hanson, 2011A. "Closure of Ash Pond D, Hutsonville Power Station, ***Construction Quality Assurance Plan***, Ameren Energy Generating Company, Crawford County, Illinois". Hanson Professional Services Inc., Springfield, IL.

Hanson, 2011B. "Closure of Ash Pond D, Hutsonville Power Station, ***Groundwater Monitoring Plan***, Ameren Energy Generating Company, Crawford County, Illinois". Hanson Professional Services Inc., Springfield, IL.

Hanson, 2011C. "Closure of Ash Pond D, Hutsonville Power Station, ***Plans and Specifications***, Ameren Energy Generating Company, Crawford County, Illinois". Hanson Professional Services Inc., Springfield, IL.

11. Licensed Professional Signature/Seal

I hereby affirm that all information and design contained in this Post-Closure Plan is true and accurate to the best of my knowledge and belief in accordance with good engineering practice.

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Seal:

Expires 11/30/2011

Signature: _____ Date: _____